

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) ~~Circuit~~ A circuit for providing power to a load with a pre-determined specification, comprising:

[[-]] a transformer having a primary winding and a secondary winding, said secondary winding being part of a resonant circuit;

[[-]] first and second load connection nodes for coupling of the load in series to the secondary winding;

[[-]] a switch coupled in series to the primary winding, an on-time and an off-time of the switch being controllable by a control element, for generating a voltage pulse over the primary winding; and

~~characterized in that a diode is directly~~ coupled in parallel to the primary winding for demagnetizing the transformer during the off-time of the switch, the on-time and the off-time of the switch

being predetermined.

2. (Currently Amended) ~~Circuit~~ The circuit according to claim 1, ~~characterized in that~~ further comprising a capacitor is added connected in parallel to the secondary winding for adjusting the a resonance period of the resonant circuit.

3. (Currently Amended) ~~Circuit~~ The circuit according to claim 1, ~~characterized in that~~ wherein the transformer has a couple factor which is smaller than one.

4. (Currently Amended) ~~Circuit~~ The circuit according to claim 1, wherein ~~a control element is added to control the switch,~~ characterized in that the control element is selected to cause the on-time of the switch to be at least half of the a resonance frequency of the resonant circuit.

5. (Currently Amended) ~~Circuit~~ The circuit according to claim 1, wherein ~~a control element is added to control the switch,~~ characterized in that the control element is selected to cause the

off-time of the switch to be sufficient to reduce ~~the a~~ current in the diode to substantially zero during demagnetization of the transformer.

6. (Currently Amended) ~~Circuit~~ The circuit according to claim 1, ~~characterized in that further comprising a resistor is connected in series to the diode to reduce the necessary switch off-time.~~

7. (Currently Amended) ~~Method~~ A method for providing power to a load, comprising the ~~steps~~ acts of:

[[-]] applying a number of voltage pulses to a primary winding of a transformer so as to produce each time a high-voltage pulse on ~~the a~~ secondary winding thereof of the transformer, which wherein the high-voltage pulse is shaped by ~~the~~ transformer inductances and capacitances at ~~the a~~ secondary side of the transformer to create a load pulse;

[[-]] applying the load pulse to the load; and
~~characterized in that providing,~~ between every application of a voltage pulse, a current path through a diode directly connected between the primary winding for the primary current is provided so

that the transformer is demagnetized and saturation of the transformer is prevented.

8. (Currently Amended) ~~Method~~ The method according to claim 7, wherein the load is a high-intensity discharge lamp, ~~characterized in that the method further comprising the acts of:~~

applying a first series of pulses is applied to ignite said high-intensity discharge lamp, whereupon and

applying a second series of pulses is applied to operate the high-intensity discharge lamp during the an electrode heating phase of said high-intensity discharge lamp.

9. (Currently Amended) ~~Method for optimizing the parameters of the~~ The circuit according to claim 1, ~~characterized in that further comprising:~~

[[-]] means for determining a the maximum oscillation period of the resonant circuit is determined on the basis of the based on a maximum value of the a capacitance at the a secondary side of the transformer when a the load is connected;

[[-]] means for choosing the on-time of the switch is chosen

to be higher than half of said maximum oscillation period.

10. (Currently Amended) ~~Method for optimizing the parameters~~
~~of the~~ The circuit according to claim 1, ~~characterized in that~~
wherein the off-time of the switch is chosen to be higher than the
a time necessary to reduce ~~the~~ a current through the diode to
substantially zero.

11. (Currently Amended) ~~Method for optimizing the parameters~~
~~of the~~ The circuit according to claim 1, ~~characterized in that the~~
further comprising:

means for calculating a mean value of the a short-circuit
current over the on-time and the off-time of the switch is
~~calculated for a range of couple factors, whereupon the~~ and

means for selecting a couple factor for which this the mean
value is minimal ~~is selected~~.

12. (New) A circuit for providing power to a load comprising:
a transformer having a primary winding and a secondary
winding, the load being connected to the secondary winding;

a switch coupled to the primary winding, an on-time and an off-time of the switch being controllable by a control element, for generating a voltage pulse over the primary winding; and

a diode directly connected in parallel to the primary winding for demagnetizing the transformer during the off-time of the switch.

13.(New) The circuit of claim 12, further comprising a capacitor connected in parallel to the secondary winding for adjusting a resonance period of a resonant circuit associated with the secondary winding.

14.(New) The circuit of claim 12, wherein the transformer has a couple factor which is smaller than one.

15.(New) The circuit of claim 12, wherein the control element is selected to cause the on-time of the switch to be at least half of a resonance frequency of a resonant circuit associated with the secondary winding.

16.(New) The circuit of claim 12, wherein the control element is selected to cause the off-time of the switch to be sufficient to reduce a current in the diode to substantially zero during demagnetization of the transformer.

17.(New) The circuit of claim 12, further comprising a resistor connected in series with the diode to reduce the off-time.

18.(New) The circuit of claim 12, wherein the control element is configured to control the switch to provide a voltage pulse to the primary winding only if a free-running current through the diode is substantially zero.